6.3: Data and Analysis

Data Collection

(Acquiring competencies) Following your detailed protocol based on the videos, perform all the experiments. Record your observations and take pictures of your key steps in the process. Your observations and images need to be incorporated in your data section and this section should be as detailed as possible as you will use this information to complete your discussion.

Data Processing

1. (Representation) Using your collected measurements, fill out the table below.

Substance	Before separation (g)	After separation (g)	Percent recovery (after/before×100%) (%)	Cause for change in mass
Salt (NaCl)				
Sand (SiO2)				
Iron (Fe)				
Total				

2. (Manipulation) Calculate the percent composition of the mixture (% NaCl, % iron and % sand) using the original amounts of each substance. Show your stepwise calculation with the appropriate units.

3. (Manipulation) Calculate the percent composition of the mixture (% NaCl, % iron and % sand) using the recovered amounts of each substance. Show your stepwise calculation with the appropriate units.

4. (Manipulation) Using the total mass of the mixture before and after the separation, calculate the % recovery. Show your stepwise calculation with the appropriate units.

5. (Assumptions and Analysis) Fill in the following table using the observations and data from your experiments.

Assumptions made	Testing the assumption	If assumptions are wrong ...
The distilled water is pure	Evaporate it and check for residue	The density would change depending on the density of the contaminant
There is no iron in the sand		The magnet will extract sand along with the filings.
Our balance is accurate		